

SOME NEMATODES FROM KANGAROO ISLAND, SOUTH AUSTRALIA

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Fig. 1-14.

THE parasites recorded in this report were collected at Flinders Chase by members of the Ralph Tate Society, led by Dr. C. T. Madigan, during an excursion to Kangaroo Island in January, 1940. For identification of some of the hosts we are indebted to the staff of the South Australian Museum, in which institution the types of the new species have been deposited. We thank the Trustees of the Flinders Chase Sanctuary for permission to collect the material studied; and acknowledge assistance received from the Commonwealth Research Grant to the University of Adelaide. The specific name *kartana* given to several of the new parasites is based on Karta, which, according to Tindale and Maegraith (Rec. South Austr. Mus., 4 (3), 1931, p. 286) is the native name for Kangaroo Island.

List of hosts and nematodes identified:

- HYLA JERVISIENSIS Dumeril and Bibron: *Hedruris hylae* sp. nov.; *Aplectana flindersi*, sp. nov.; *Raillietnema kartanum* sp. nov.
VARANUS GOULDI Gray: *Physaloptera antarctica* Linst. (var. *typica* Irw. Smith).
HEMIERGIS PERONI (Fitzinger): *Thelandros kartana* sp. nov.
GYMNODACTYLUS MILII Bory de St. Vincent: *Pharyngodon kartana* sp. nov.
THYLOGALE EUGENII Peron and Lesueur: *Cloacina curta* J. and M.; *C. petrogale* J. and M.; *Zoniolaimus eugenii* J. and M.

THELANDROS KARTANA sp. nov.

Fig. 1-3.

From a lizard, *Hemiergis peroni*.

Males about 2 mm. long; females 4.5 to 6.3 mm. long. Head rounded; six low lips each with small papilla. Mouth leading to vestibule 15μ wide, 12μ long, with three rounded teeth at base. Oesophagus long (0.34 mm. in male; up to 1 mm. in female), narrow, ending in bulb. Nerve ring 0.15 mm. from head end in female 4.9 mm. long.

Male: Anus on prominence about 15μ in front of rounded posterior region from which projects the tail, 50μ long. One pair adanal papillae; one pair post-anal, more laterally situated; one median postanal; a pair nearly midway along narrowed portion of tail. Spicule 55μ long, very slightly chitinized.

Female: Tail 0.36-0.4 mm. long, tapering to sharp point. Vulva 1.5 mm. in front of posterior end of body. Eggs $75-90\mu$ by $35-45\mu$, with pitted shell.

The species resembles closely *T. maplestoni* (Chatterji) Baylis 1936 in general form and size, but differs in the length of the tail and the spicule in the male, the position of the vulva, the number of lips and the presence of cephalic papillae.

PHARYNGODON KARTANA sp. nov.

Fig. 4-6.

From two geckoes, *Gymnodactylus milii*.

Males 2.2-2.6 mm. long; females 4-5 mm. Head with three low lips; buccal cavity funnel-shaped, chitinized, 10μ long in male. Oesophagus 0.33 mm. long in

male, 0.47 mm. in female; its terminal bulb with chitinous blades. Nerve ring 0.15 mm. and excretory pore 0.56 mm. in male, 0.62 mm. in female, from head end. Excretory pore large, circular, with strongly chitinized margin; the structures variously described as "cilia" and "bristles" present, but appearing in our specimens rather as grooves or creases on posterior part of margin; pore leading directly to spherical vesicle connected with two anterior and two posterior lateral ducts.

Male: Tail characterized by great length of narrow terminal portion, 0.3 mm. long. Lateral alae extending from mid-oesophageal region to anterior end of caudal alae, widening gradually to greatest breadth just before termination. Anterior (preanal) pair caudal papillae sessile; near their bases a projection of body wall supporting anterior end of caudal alae. Adanal pair papillae bifurcated; postanal pair wide, conical, included in alae. Posterior lip of cloaca projecting as blunt spike. Spicule, if present, very lightly chitinized, 60μ long.

Female: Tail tapering suddenly 0.25 mm. posterior to anus, ending in long narrow portion 0.95 mm. long, provided with about seven spines on proximal two-thirds of length. Vulva immediately behind excretory pore. Eggs $115\mu \times 30\mu$ with one side slightly flattened, and with plug-like structure at each end, embryo in early segmentation.

This species agrees with *P. tiliquae* Baylis from *Tiliqua scincoides* from Queensland, and with *P. hindlei* Thapar from the same host species (recorded in error as *T. senicordis*) in the number and arrangement of papillae on the male tail, but differs in the length of the tail in both male and female, and in the size of the spicule (if present). It also differs from *P. tiliquae* in the width of the lateral alae in the male; and from *P. hindlei* in the absence of two additional pairs of papillae. It differs from *Pharyngodon* sp. Thapar 1925 from *Egernia cunninghami* in the absence of spines on the female tail, as well as in the length of the latter.

RAILLIETNEMA KARTANUM sp. nov.

Fig. 7-8.

From a frog, *Hyla jervisiensis*.

Males 3-3.3 mm. long; female 4 mm. Lateral alae present in both sexes, in male extending to cloaca, in female to level of caudal papillae. Mouth with three lips; presence of cephalic papillae doubtful—true buccal cavity absent but chitinous lining of oesophagus covers inner border of each lip and projects as three thin plates resembling elements of a leaf crown. Oesophagus 0.48 mm. long in male, narrow, with terminal bulb longer than wide. Nerve ring at about midlength of oesophagus. Excretory pore slit-like, at level of anterior end of bulb.

Male: Caudal alae with seven pairs pedunculate papillae; also six sessile preanal pairs, three adanal pairs, a pair at midlength, and a pair near tip of tail. Body gradually narrowing posteriorly to anus; tail 0.14 mm. long, ending in sharp point. Spicules 0.13 mm. long, subequal, similar, acicular, not strongly chitinized but marked with transverse striations.

Female: Tail 0.3 mm. long, tapering to blunt point; pair of caudal papillae 0.12 mm. from tip. Only specimen present is immature, with eggs not yet fertilized and vulva not recognizable.

We assign the species to *Raillietnema* with some reserve. It agrees in the possession of caudal alae and the absence of a gubernaculum. It differs from the type species of *Oxysomatium* in these features, as well as in the number of cephalic papillae; and from other species of the genus in the number and arrangement of the caudal papillae and in the length of the spicules.

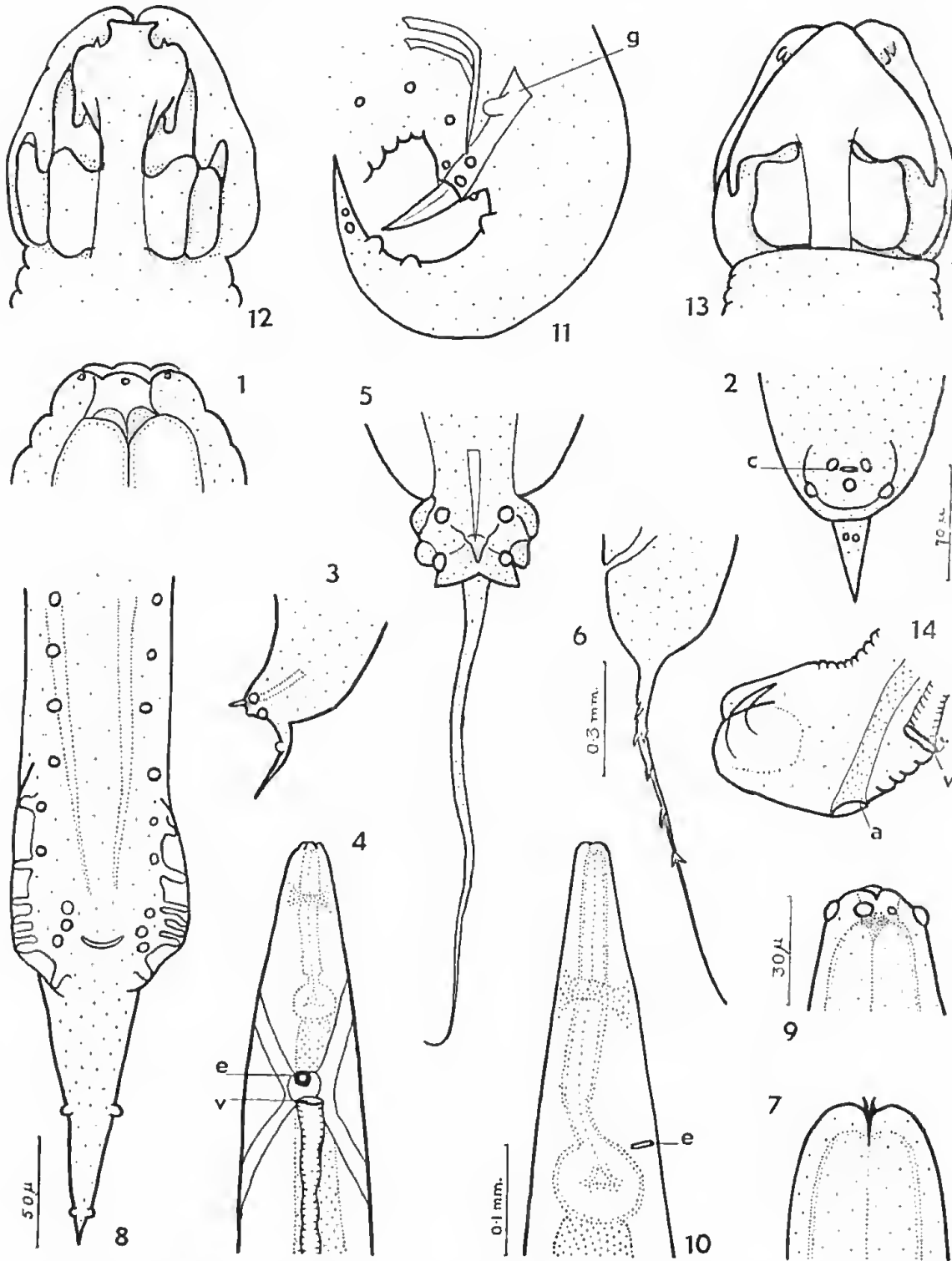


Fig. 1-3. *Thelandros kartana*. 1, head; 2, male tail, ventral view; 3, male tail, lateral view.

Fig. 4-6. *Pharyngodon kartana*. 4, anterior end; 5, male tail; 6, female tail.

Fig. 7-8. *Raillietnema kartanum*. 7, head; 8, male tail.

Fig. 9-11. *Aplectana flindersi*. 9, head; 10, anterior end; 11, male tail.

Fig. 12-14. *Hedruris hylae*. 12, head, lateral view; 13, head, ventral view; 14, tail, lateral view.

Fig 1, 7 and 9 to same scale; 2, 3, 5 and 11; 4, 6 and 14; 10, 12 and 13. a, anus; c, cloaca; e, excretory pore; g, gubernaculum; v, vulva.

APLECTANA FLINDERSI sp. nov.

Fig. 9-11.

From a frog, *Hyla jervisiensis*.

Only one male available, 2.1 mm. long. Head with three shallow lips; behind latter four large and two small papillae. Buccal cavity 10μ wide, 7μ long, with three teeth at base. Oesophagus 0.34 mm. long (including posterior bulb, 70μ long, 80μ wide); bulb slightly constricted from remainder. Nerve ring 0.13 mm. from head end. Excretory pore slit-like, at level of anterior end of bulb. Posterior end curved ventrad; tail about 0.17 mm. long, tapering to point. Two pairs pre-cloacal papillae. Cloaca on elevation surrounded by three pairs small papillae; laterally from latter two pairs; posteriorly five pairs arranged as in fig. 11. Spicules similar, equal, 110μ long, very fine but well chitinized. Gubernaculum 130μ long, much stouter and more strongly chitinized than spicules, and protruding through cloaca; with two stout lateral projections near proximal end.

We have assigned the species to *Aplectana* because of the presence of a buccal cavity, two equal spicules and a gubernaculum. It is distinguished from other species of the genus of which accounts are available, by the large size of the gubernaculum relative to the spicules.

HEDRURIS HYLAE sp. nov.

Fig. 12-14.

From a frog, *Hyla jervisiensis*.

One female present; 9 mm. long, 0.55 mm. wide. Head 0.23 mm. long, 0.23 mm. in maximum breadth. Lips narrower than interlabia, but of essentially similar shape; each lip and interlabium with a median, two antero-lateral and two postero-lateral projections; median anterior projection on lips more sharply differentiated from antero-laterals; each latter with small conical papilla. Oesophagus ending 1.4 mm. behind anterior end. Nerve ring at 0.35 mm. and excretory pore at 0.43 mm. behind head end. Cervical papillae very small, 0.54 mm. behind base of lips. Sucker-like invagination of tail in dorsal position, hook 0.3 mm. long. Anus 0.35 mm. from posterior end; vulva 0.2 mm. in front of anus; eggs thick-shelled, 35μ diameter.

The species differs from all others whose description is available to us, in the shape of the lips. The genus had not been identified previously from Australia.

OTHER SPECIES OF NEMATODES.

The parasites listed above from the Kangaroo Island wallaby, *Thylogale eugenii*, and from the lizard, *Varanus gouldi*, present no new features of interest.

LITERATURE.

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